

And in prosecution of this Experiment, having taken the filings of Iron and Steel, and with the point of a Knife cast them through the flame of a Candle, I observed where some conspicuous shining Particles fell, and looking on them with my *Microscope*, I found them to be nothing else but such round Globules, as I formerly found the Sparks struck from the Steel by a stroke to be, only a little bigger; and shaking together all the filings that had fallen upon the sheet of Paper underneath, and observing them with the *Microscope*, I found a great number of small Globules, such as the former, though there were also many of the parts that had remained untoucht, and rough filings or chips of Iron. So that, it seems, Iron does contain a very *combustible sulphureous* Body, which is, in all likelihood, one of the causes of this *Phenomenon*, and which may be perhaps very much concerned in the business of its hardening and tempering: of which somewhat is said in the Description of *Muscovy-glass*.

So that, these things considered, we need not trouble our selves to find out what kind of Pores they are, both in the Flint and Steel, that contain the *Atoms of fire*, nor how those *Atoms* come to be hindred from running all out, when a dore or passage in their Pores is made by the concussion: nor need we trouble our selves to examine by what *Prometheus* the Element of Fire comes to be fetcht down from above the Regions of the Air, in what Cells or Boxes it is kept, and what *Epimetheus* lets it go: Nor to consider what it is that causes so great a conflux of the atomical Particles of Fire, which are said to fly to a flaming Body, like Vultures or Eagles to a putrifying Carcass, and there to make a very great pudder. Since we have nothing more difficult in this *Hypothesis* to conceive, first, as to the kindling of Tinder, then how a large Iron-bullet, let fall red or glowing hot upon a heap of Small-coal, should set fire to those that are next to it first: Nor secondly, is this last more difficult to be explicated, then that a Body, as Silver for Instance, put into a weak *Menstruum*, as unrectified *Aqua fortis* should, when it is put in a great heat, be there dissolved by it, and not before; which *Hypothesis* is more largely explicated in the Description of Charcoal. To conclude, we see by this Instance, how much Experiments may conduce to the regulating of *Philosophical notions*. For if the most Acute *Des Cartes* had applied himself experimentally to have examined what substance it was that caused that shining of the falling Sparks struck from a Flint and a Steel, he would certainly have a little altered his *Hypothesis*, and we should have found, that his Ingenious Principles would have admitted a very plausible Explication of this *Phenomenon*; whereas by not examining so far as he might, he has set down an Explication which Experiment do's contradict.

But before I leave this Description, I must not forget to take notice of the Globular form into which each of these is most curiously formed. And this *Phenomenon*, as I have elsewhere more largely shewn, proceeds from a propriety which belongs to all kinds of fluid Bodies more or less, and is caused by the Incongruity of the Ambient and included Fluid, which so acts and modulates each other, that they acquire, as neer as is possible,

possible, a *spherical or globular* form, which propriety and several of the *Phenomena* that proceed from it, I have more fully explicated in the sixth Observation.

One Experiment, which does very much illustrate my present Explication, and is in it self exceeding pretty, I must not pass by: And that is a way of making small *Globules* or *Balls* of Lead, or Tin, as small almost as these of Iron or Steel, and that exceeding easily and quickly, by turning the filings or chips of those Metals also into perfectly round *Globules*. The way, in short, as I received it from the *Learned Physitian Doctor I. G.* is this;

Reduce the Metal you would thus shape, into exceeding fine filings, the finer the filings are, the finer will the Balls be: *stratifie* these filings with the fine and well dried powder of quick Lime in a *Crucible* proportioned to the quantity you intend to make: When you have thus filled your *Crucible*, by continual *stratifications* of the filings and powder, so that, as neer as may be, no one of the filings may touch another, place the *Crucible* in a *gradual fire*, and by degrees let it be brought to a heat big enough to make all the filings, that are mixt with the quick Lime, to melt, and no more; for if the fire be too hot, many of these filings will joyn and run together; whereas if the heat be proportioned, upon washing the Lime-dust in fair Water, all those small filings of the Metal will subside to the bottom in a most curious powder, consisting all of exactly round *Globules*, which, if it be very fine, is very excellent to make Hour-glasses of.

Now though quick Lime be the powder that this direction makes choice of, yet I doubt not, but that there may be much more convenient ones found out, one of which I have made tryal of, and found very effectual; and were it not for discovering, by the mentioning of it, another Secret, which I am not free to impart, I should have here inserted it.

Observ. IX. Of the Colours observable in Muscovy Glass, and other thin Bodies.

Moscovy-glass, or *Lapis specularis*, is a Body that seems to have as many Curiosities in its Fabrick as any common Mineral I have met with: for first, It is transparent to a great thickness: Next, it is compounded of an infinite number of thin flakes joyned or generated one upon another so close & smooth, as with many hundreds of them to make one smooth and thin Plate of a transparent flexible substance, which with care and diligence may be slit into pieces so exceedingly thin as to be hardly perceivable by the eye, and yet even those, which I have thought the thinnest, I have with a good *Microscope* found to be made up of many other Plates, yet thinner; and it is probable, that, were our *Microscopes* much